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(54) SURFACE MOUNT LIGHT-EMITTING DIODE AND ITS MANUFACTURE

(57)Abstract:

PROBLEM TO BE SOLVED: To permit uniform wavelength conversion and to reduce the color irregularity caused by the difference of conversion efficiency by specifying the critical angle of an emitted light from an LED at the interface between a substance whose difference of refractive index is smaller than that of air and the radiation surface of an LED chip and the radiation surface of the LED chip.

SOLUTION: A space is provided at the recessed sections in main bodies 1 and 2. A resin has the refractive index value whose difference between the refractive index thereof and the refractive index of the radiation surface of an LED chip is smaller than the difference between the refractive index thereof and the refractive index of air. Such resin is filled so that it contacts wavelength conversion sheet and an LED chip. In this case, the critical angle of a radiation light from the LED at the interface between the resin and the radiation surface of the LED chip is set to a large value than 45 degrees. Thereafter, the resin is hardened by a hardening treatment, etc., then a wavelength conversion element 6 is fixed and it is bonded and fixed with a high refractive index resin sealing layer 7. Thus, a rigid installation can be realized.

